

Charm Cross Sections

What do we use in the publication?

Charm σ

- Theses have used Reinhard's Appendix A
 - Use p and π beams at various energies
 - Use D^0 in 800 GeV pN data as reference
 - Compute $D^\pm D_s$ by $[\sigma(D^\pm)/\sigma(D^0)] \times \sigma(D^0)$

Charm σ

It is valid to use ratios if:

1. $\sqrt{s} > E_{\text{min}}$ where $E_{\text{min}} \sim 15 \text{ GeV}$
2. Leading *quark* effects
3. Acceptance not restricted $x_F \sim 0$

Charm σ

- But in Reinhard's Appendix A:
 - ▶ He gets $\sigma(D^0) = 27.4 \mu b$, somehow(!!?)
- The 3 values of $\sigma(D^0)$ @800 GeV give:
 - ➡ $\sigma(D^0) = [22.0 \pm 3.2 \mu b]$ (weighted avg.)

Charm σ



Using the value $\sigma(D^0) = 22.0 \mu b$:

$\Rightarrow \sigma \times BR$ for ν_e production is 3.43



Emily (using RS value) gets 4.41

$\Rightarrow \nu$ flux will be reduced by 22%

[should get A_c data also]